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ABSTRACT

This study investigated whether words that are glossed (defined) in a second language text correspond to the words that readers of differing ability find difficult. It examined: (1) whether marginal glosses provide assistance to students of first-, second-, and third-semester college French in their comprehension of authentic text, as measured by a recall protocol; (2) what percentage of the glossed material was recalled by these students; and (3) whether the words originally glossed in the passage were those that seemed problematic to the students. Subjects were 90 university students whose native language was English. Each read either a glossed or unglossed version of the same text, wrote what they recalled of the text in English, and underlined words in the text that they found difficult. Analysis of results indicates that the third-semester students did perform better than first- or second-semester students, that subjects with glossed texts did not recall significantly more of the glossed material than did the other group, and that the textbook authors did gloss many of the words found most difficult by the students. Contains 12 references. (MSE)

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Erin E. Joyce

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Which Words Should Be Glossed in L2 reading Materials?: A Study of First, Second, and Third Semester French Students' Recall.

by Erin E. Joyce, *The Pennsylvania State University*

Introduction: *Why Study Glossing?*

The debate over whether glossing actually facilitates the reading comprehension of foreign or second language learners appears to be not unlike a game of table tennis. Whereas some research has suggested glosses to be helpful for such readers, other studies have challenged their effectiveness. Because glossing is a standard feature of most foreign and second language textbooks and materials, it warrants further investigation. Another related issue that has received little attention in the literature is whether or not the words that are glossed in a second language text correspond to the words that readers of differing levels of ability find difficult. The following study attempts to provide evidence of whether or not students' indications of unknown items in a passage in French coincide with the items that have been glossed by the textbook authors in that same passage. The following research questions will be addressed:

1) Do marginal glosses provide assistance to students of first, second, and third semester French in their comprehension of an authentic text in French as measured by a recall protocol exercise?
2) What percentage of the glossed material is recalled by these students as shown in their written recall protocols?
3) Using the same reading passage, are the words that were originally glossed in the passage the same words that seem problematic to these students?

Review of the Literature

As far as the debate over whether or not glosses aid reading comprehension in foreign language texts, Davis suggested that the use of marginal glosses in an authentic literary text in French enhanced the comprehension of the passage, as determined by a recall protocol task. Luo supported Davis' findings and also suggested that glossing is especially helpful in a text containing a large amount of unknown vocabulary. Replicating Davis' study, he also came to the conclusion that only glosses written in the subjects' native language were helpful in reading comprehension.

These two studies countered the results of Johnson's research which suggested the ESL students' reading comprehension did not benefit from receiving glosses under certain conditions while reading a text written in English. One important factor can be noted about this study, however. The text used was not authentic, but rather was created by the experimenter for the purpose of the study. The researcher may have been able to anticipate which words would be difficult or easy for the subjects to understand, and therefore, could have tailored the text to match their vocabulary threshold. Thus, the glosses may not have been necessary in aiding comprehension.

Jacobs and Dufon also reported no significant benefit to reading comprehension for students who received glosses in an authentic text in Spanish. In his review of this study, Luo noted, however, that the text, albeit authentic, was taken from a second - semester college level Spanish textbook, whereas the subjects who participated in the study were beyond the second semester level. Therefore, the text was probably too easy for them, and the glosses were of no use. Such a finding supports the need for the text to be difficult enough for the readers to require assistance in comprehension such as glossing procedures.

Concerning the related issue of whether or not materials developers are choosing to gloss the appropriate words and phrases in foreign language materials, Brutten attempted to determine whether or not experienced ESL teachers could anticipate which words would prove difficult for intermediate ESL students in a reading passage. Her results showed 91 percent agreement between the two groups with respect to the words the teachers chose. However, the students did label many more words than the teachers had anticipated. The implications of this study suggest that teachers or materials developers may

not be glossing enough words even though the ones they do gloss relatively correspond to those that the students find difficult. She suggests that further research should attempt to determine the accuracy of students' selection of difficult words through a measure of comprehension testing. It may be added that such research should also be carried out in the context of foreign language learning. The current study aims to do this, as well as to shed light on the debate over the general effectiveness of marginal glossing in foreign language texts.

The Present Study

Subjects. Ninety subjects participated in this study. At the time, all subjects were matriculated at The Pennsylvania State University and were enrolled in either a first, second, or third semester French class. All of the subjects affirmed that English was their native language. The French 1, 2, and 3 curricula at Penn State included much practice with authentic[1] reading materials, thereby ensuring that the subjects were not reading a type of material that would be unfamiliar to them. Each subject's informed consent was obtained on a signed form.

Instrument. To determine whether or not marginal glosses in a text in French text would aid the reading comprehension of students of first, second, and third semester French, a recall protocol task was chosen for this study (the details of the task will be explained in the Methods section of this paper). Bernhardt claimed that recall protocols "provide a purer measure of comprehension, uncomplicated by linguistic performance and tester interference" (200). However, Bernhardt emphasizes that the recall protocol should be written in the subjects' native language (200). Lee supported this decision in his research saying that writing a recall in the target language may be too taxing for students, therefore, more information may be comprehended than can be recalled in the target language. As the passage for comprehension, a journalistic text was selected from the third semester French textbook being used at Penn State[2]. The text, entitled "Les Jeunes en France: Adolescents plus tôt, adultes plus tard" (Young People in France: Adolescents Earlier, Adults Later") was chosen for several reasons. First, it consists of 485 words in glossed version (including glosses). Its length might reduce the chance of the subjects' being able to rely on their short term memory to complete a recall protocol task as suggested by Lee & Riley. A second reason for the selection of this passage is that even though it was taken from an intermediate/advanced French textbook, the large number of cognates and high - frequency words in the passage make it easier for beginning French readers to understand. As noted in the review of the literature, glossing appears to be more facilitative when the text is difficult enough for the readers to require assistance in understanding. Thus, it was presumed that the text chosen for the current study would be difficult enough to ensure this condition, especially for the first semester students. Finally, this passage was chosen because it is representative of passages that the subjects usually encounter in their French classes in terms of length, topic, and rhetorical structure.

Method. The data were collected during the regular class periods of the subjects. The subjects were told that they were going to be given a certain amount of time to read a passage in French as many times as they could, and then they were going to be asked to write down everything they remembered about the text in English on the back of the page. One of two versions of the text were distributed to each of the subjects in all three levels, after their informed consent was obtained. One version contained the original glosses that were provided by the textbook authors. The other version contained no glosses. The first semester students were given approximately fourteen minutes to read the passage as many times as they could. The second semester students were given twelve minutes, and the third semester, ten minutes. These time limits were chosen on the basis of previous studies of this type (Carrell; Davis; Holley and King). After having read the text, the subjects were then given as much time as was necessary to write down everything they could remember in English on the back of the page.

In order to treat the third research question concerning the words that the subjects found difficult in the text, the subjects were asked to perform a second task with the same materials. Upon completion of the recall task, the subjects were asked to turn their papers over and to underline no more than fifteen words in the passage of which they would have liked to have been given the definitions while they were reading the passage. Those with the glossed texts were to take into consideration those words that were already glossed. They could select those words as well as the unglossed words. The limit of fifteen words was imposed so that the students would give serious thought to which words they selected, a strategy resulting in more valid choices. The

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number fifteen was also chosen because there are fifteen glosses in the original text.

Analysis, Results, and Discussion

In order to analyze the data, two independent variables are identified: the subjects' semester standing in a French class and whether they received the glossed or the unglossed text. For the first and second research questions, the dependent variable is the subjects' scores on the written recall protocol exercise. In order to analyze the results for the first research question, whether or not the glosses significantly helped the subjects to comprehend more information from the text as demonstrated by a recall protocol exercise, the number of idea units recalled by each subject was tallied[3]. The mean number of idea units recalled was then calculated for each of the six treatment groups. Table 1 show the mean of each recall score for each of the six groupings.

Table 1

Means Table for Recall Score

Semester	Condition	n	Mean
first	unglossed	11	8.636
first	glossed	12	9.500
second	unglossed	18	10.889
second	glossed	17	14.471
third	unglossed	18	15.056
third	glossed	13	13.077

Effect: Semester Level * Glossing Condition

To test for statistical significance, an analysis of variance procedure was carried out using a 2x3 unbalanced factorial design. The results in Table 2 show that the p-value for the independent variable of semester level approaches significance. However, the difference in glossing condition and for semester level vs. glossing condition were not significant.

ANOVA Table for Recall Score

	DF	Sum of Squares	Mean Square	F- Value	P-Value
Semester Level	2	338.355	169.178	2.933	.0588*
Glossing Condition	1	14.449	14.449	.251	.6180
Semester Level* Glossing	2	125.329	62.664	1.086	.3422
Residual	83	4787.426	57.680		

* Approaching significance at p < .05

Because the semester level data approached significance, a post-hoc procedure, the Fisher Protected Least Significant Difference, was performed, to find where the difference was located. The Fisher test revealed that there was a significant difference in the performance of the first semester group compared to the third semester group, but no significant difference was found between the other semester groups, as seen in Table 3.

Table 3

Fisher's PLSD for Recall Score

	Mean Diff.	Crit. Diff.	P - Value
First, Second	-3.542	4.055	.0860
First, Third	-5.139	4.157	.0160*
Second, Third	-1.597	3.726	.3693

Effect: semester Level

Significance Level: 5%

* significant

These statistics would suggest that the third semester students did score significantly higher than the first semester students, although the second semester students did not outperform the first semester students, nor did the third semester students outperform the second semester students. The analysis also show that the glosses did not provide significant help for those students with glossed texts.

The second research question deals with the percentage of the glossed material the subjects recalled in their protocols. The recalls were analyzed once again and any occurrence of a glossed word appearing in the recalls was noted, as shown in Table 4.

Table 4

Percentage of Glossed Material Recalled

	first semester	second semester	third semester
unglossed	(n =12) .166	(n = 18) .444	(n = 18) .444
glossed	(n = 12) 1.833	(n = 17) 2.588	(n = 13) 1.615

A preliminary analysis of these percentages suggests that the subjects with the glossed texts did not recall significantly more of the glossed material than did the unglossed groups. Therefore, we might make the assumption that for this text, the glossed material was no more easily comprehended than the rest of the text.

Regarding the third research question, concerning the words in the text that the subjects found difficult, the fifteen or fewer words that each subject underlined were tallied and analyzed. Tables 5, 6, and 7 provide a list of the words that were most frequently selected for each semester level group and the number of subjects that selected them. The uppercase type indicates that the word was glossed in the original passage.

Table 5

Most Frequently Selected Words By Group - First Semester

First semester unglossed		First semester glossed	
EPARGNENT	9	vraiment	6
deviennent	6	tôt	6
jeunes	6	apparaît	4
vraiment	5	chaque	4
POIDS	5	copains	4
moyenne	5	loisir	4
tôt	5	moyenne	4
surtout	4	moyens	4
copains	4		
CEPENDANT	4		

Table 6

Most Frequently Selected Words By Group - Second Semester

Second semester unglossed		Second semester glossed	
EPARGNENT	11	foyer	11
DELAISSEES	10	EPARGNENT	7
PEAU	8	apparaît	6
loisir	7	rêves	6
dehors	7	moyenne	6
CEPENDANT	7	CEPENDANT	6
POIDS	6	deviennent	5
decouverte	6	découverte	5
copains	5	doute	4
émissions	5	QUANT A	4
évoluent	5	tôt	4
moyenne	5	S 'ASSUMER	4
partage	5	copains	4
tôt	5	partage	4
vraiment	4	acquièrent	4
richesse	4		
tendent	4		
plutôt	4		
apparaît	4		
majeure	4		
donc	4		
intérêt	4		

Table 7

Most Frequently Selected Words By Group - Third Semester

Third semester unglossed		Third semester glossed	
EPARGNENT	14	DELAISSEES	9
CEPENDANT	8	EPARGNENT	6
DELAISSEES	8	acquièrent	6
PEAU	8	paradoxale	4
consommation	7	POIDS	4
POIDS	6	PEAU	4
SENTENT	6	OUTIL	4
l'avenir	6	moyenne	4
deviennent	5	foyer	4
decouverte	5	évoluent	4
partiel	5		
partage	4		
autonomie	4		
intérêt	4		
SEIN/AU SEIN	4		
dehors	4		

Several interesting differences can be noted between the words that the unglossed and the glossed groups selected. First, nine of the subjects in the first semester unglossed group chose the word "épargnent", whereas none of the subjects in the glossed group did. Since the word had been glossed for them, perhaps they were reluctant to choose it and "use up" one of the fifteen words they were entitled to underline. The data also shows that the unglossed group chose three of the originally glossed words rather frequently ("épargnent", "poids", and "cependant"), whereas none of the originally glossed words appears on the glossed group's list.

As for the words that were not glossed in the original text, it appears that the following four words: "vraiment", "tôt", moyenne", and "copains" were selected rather often by both the glossed and unglossed groups. Given that the text was found in an intermediate level textbook, it is not surprising that the first semester students would choose words different from those that were glossed for the intermediate level students.

Table 6 show the words that were frequently selected by the second semester subjects. In the second semester unglossed group, five of the originally glossed words were underlined frequently and the glossed group chose four of these words fairly often. It is notable that unlike the first semester glossed group, the second semester glossed group did choose words that had been originally glossed for them in the passage.

Regarding the unglossed words, there are several that were frequently indicated by both second semester subject groups as difficult: "découverte", "copains", "partage", "moyenne", "apparait", and "tôt". Looking back at the first semester subjects' data, three out of four of the words that they frequently underlined were also selected by both groups among the second semester learners: "copains", "tôt", and "moyenne".

Table 7 shows the word selection data for the third semester groups. Seven of the originally glossed words were frequently underlined by the unglossed group and five were chosen by the glossed group. These two groups both frequently selected four of the originally glossed words: "Epargnent", "délaissées", "peau", and "poids".

None of the unglossed words appears on both the third semester unglossed and glossed subjects' lists of most frequently chosen words. This fact suggests that where there was some agreement between the lists of the first and second semester subjects regarding unglossed words, the third semester subjects did not uniformly find words that were difficult but had not been glossed for them. Since the text was indeed intended for the use of third semester French students, these results could show that the textbook authors were correct in choosing the words for glossing that the third semester learners identified as difficult. It seems, however, that the words that the subjects of all three semester standings chose frequently were typically low- frequency words or words that were not cognates of English words.

The above data suggests that the textbook authors did indeed gloss many of the words that seemed the most difficult to learners of French at the second and third semester level. As shown in Table 8, the second semester groups indicated that 60 to 80 percent (unglossed and glossed groups, respectively) of the words that were glossed in the original text were difficult for them. The third semester groups deemed 86.66 and 86.66 percent of the originally glossed words as problematic.

Table 8

Percentage of Subject - Selected Words that Were Glossed in the Original Text

	First semester		Second semester		Third semester	
unglossed	(n = 12)	46.66	(n = 18)	60.00	(n = 18)	86.66
glossed	(n = 12)	33.33	(n = 17)	80.00	(n = 13)	86.66

This exploratory analysis supports Brutten's findings that experienced teachers and textbook authors are capable of determining which words are going to be difficult for readers of foreign language texts for their audience's proficiency level. The fact that the number of glossed words selected by first and second semester subjects were lower may be explained by the fact that since this was a text glossed for third semester students, there were simply more words that they found difficult than the third semester students found difficult, thus compelling them to underline different words.

The lists of words that were underlined by the subjects of each level, especially those of the third semester, for whose level the text was glossed, suggests that students may need to have more

words glossed for them than are currently being glossed. Further research should determine the appropriate percentage of words to be glossed in texts for second language learners of all levels.

Limitations and Suggestions

While recall protocols have been endorsed by reading researchers such as Bernhardt as an effective method of testing reading comprehension, other studies such as that of Wolf have suggested that there is no one true existing method of assessment for reading comprehension can have an impact on the results of a study (318). It may therefore be beneficial to use more than one method of reading comprehension assessment in further research. Future studies could perhaps include a design similar to the one presented in this paper, using several types of reading comprehension assessment methods to make sure that the true comprehension of the subjects is being measured. Recall protocols have also been criticized for not being capable of displaying everything subjects understand, but simply what they can recall. It may be the case that subjects do understand much more than they can recall in a recall protocol task.

Text type must also be considered when performing research on reading comprehension. Davis and Luo found that marginal glosses in the subjects' L1 aided comprehension of a literary text. However, in this study, there were no significant effects for enhanced comprehension of a journalistic text with marginal glosses. Future research might compare the effects of glossing for several different text types. Perhaps we will then discover if glosses are more helpful in understanding certain types of text over others.

Finally, more studies should also be conducted with pedagogical materials to determine if we cannot find an even more precise match between textbook authors and students as to which words are difficult to understand. Information as to the number of words that should be glossed in a text for maximum student benefit should also be obtained through further research.

Conclusion

The results of this study suggest that where there was approaching significance for semester level for the recall protocol task, there were no significant main effects for glossing condition. The glossed groups did not seem to recall significantly higher amounts of glossed material in their recalls either. As for the third research question, however, the data suggest that there is a rather strong match between the words that the subjects found difficult in the text and the words that were originally glossed in the passage at the second and third semester level. Since this text was intended for the use of third semester French students, preliminary analysis suggests that the materials developers of this passage were fairly accurate with their choice of words to gloss.

It is important that future research continue to examine the value of glossing in foreign language texts. In doing this, we can hopefully obtain more knowledge about what aids foreign language students in comprehending texts in general. Since so much linguistic, general, and cultural knowledge can be learned through reading authentic texts, we want to make sure that our students can use them to their fullest potential.

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[1]Rogers and Medley define authentic material as "language samples, either oral or written, that reflect a naturalness of form and an appropriateness of cultural and situational context that would be found in the language as used by native speakers" (468).

[2]Bragger, Jeannette D., and Donald B. Rice. *Allons voir les Français et les Françophones* (Boston, MA: Heinle and Heinle, 1992) 174.

[3]The text was divided into 107 idea units, according to Johnson's system of breath or pausal unit scoring (qtd. in Bernhardt: 209).

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